He has obtained his BSc Engineering degree from University of Moratuwa in 1994; subsequently obtained Master’s Degree in the field of Textile Studies and MBA in Management of Technology.

He is a charted environmental professional, an experienced Cleaner Production auditor and an Energy auditor.

He is a professional with 25 years of experience in advisory, capacity building and performance evaluation of the industries at national and international levels. He has involved in international projects mainly in Resource efficiency and Cleaner Production in Bangladesh and Pakistan.

Novel Business Models for Circular Economy

Samantha Kumarasena, Chief Executive Officer, National Cleaner Production Centre, Sri Lanka
Principle 1- Preserve and enhance natural capital

- Virtual products
- Sharing economy – second hand products …
- Product lifetime extension
- Products made from renewable materials
 Principle 2 – Optimise resource yield

Use products, components and materials up to the end of their useful lifetime

- Durable Products – new design of products
- Repair practice – availability of parts
- Careful use of items – consumption behaviour
Principle 3 – Foster system effectiveness

• Design out negative externalities
• Reflect on actual need of the products – review excessive resource consumption
• Conscious use of resources
  ✓ Changes in product design
  ✓ Changes in manufacturing process
  ✓ Reduce /avoid wastes
• Reduce negative environmental impact
What is eco-innovation?

• “Eco-innovation is the development and application of a business model, shaped by a new business strategy that incorporates sustainability throughout all business operations based on life cycle thinking and in cooperation with partners across the value chain. It entails a coordinated set of modifications or novel solutions to products (goods / services), processes, market approach and organizational structure which leads to a company’s enhanced performance and competitiveness.”
Company Profile

• Sector: Coconut Products
• Year of establishment: 1963
• Number of Employees: 85
• Main business operation: Manufacturing and export of desiccated coconut
Traditional Business Model of the Company

Source raw inorganic coconut from suppliers → Process DC → Coconut water getting wasted → Sell to brokers for exportation - Reduces profit margin
New Business Model of the Company

- Source raw organic coconut from suppliers
- Process DC, Virgin oil & white coconut oil
- Adopting Zero Discharge concept
- Directly export to global consumers

International Conference on Resource Efficiency and Circular Economy
Company Profile

- Sector: Dairy
- Year of establishment: 1998
- Number of Employees: 92
- Main business operation:
  Manufacturing of ice cream, yoghurt, curd, yoghurt with trickle, jelly yoghurt and yoghurt drink

Main products

- Ice cream
- Curd
- Yoghurt
- Yoghurt with trickle
- Drinking yoghurt
Traditional Business Model of the Company

Traditional milk farming

Rasoda with less milk yield

Final products

Distribution

End consumer

International Conference on Resource Efficiency and Circular Economy
New Business Model

Rasoda with maximized profits

Happy farmers with increased milk yield

High quality dairy products

Distribution

Happy customers
Chemical leasing – An alternative business model to face the challenge!

- Chemical Leasing is an innovative service-oriented business model for the sound & efficient use of chemicals (value-added functional approach)
- Chemical Leasing is centred around a unit of payment; the payment is no longer related to the chemical itself, but to the benefits of the chemical!
Chemical Leasing – Centred around a unit of payment!

User of the chemical

Does not pay to own a chemical, but spends money for the benefits provided by a chemical

Producer of the chemical

Sells the function of a chemical, including **know how** on efficiency and risks, adding **management services** like production management and logistics
In alternative Chemical Leasing business model…

Amount of produced chemicals will decline as chemicals volume turns from a factor for earnings (“the more you sell the more you earn“) to a cost driver (“less is more“)

Added value can be shared among the involved partners
Payments on the benefits of chemicals!

Chemical producer provides chemicals to the user (no sales in volumes)

payment not for the chemical itself, but for the benefits of the chemical (e.g. not for tons of cleaning agent used, but for number of products or area cleaned!)

amount of produced chemicals will decline as chemicals volume turns from a factor for earnings ("the more you sell the more you earn") to a cost driver ("less is more")
Chemical leasing business models bundle motivations

Traditional business models:
Contradictory motivations

<table>
<thead>
<tr>
<th>supplier</th>
<th>Delivery of goods</th>
<th>consumer</th>
</tr>
</thead>
<tbody>
<tr>
<td>material</td>
<td>&quot;the more the better&quot;</td>
<td>&quot;less is more&quot;</td>
</tr>
<tr>
<td>(costs, volume)</td>
<td></td>
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</tbody>
</table>

Chemical leasing models:
Bundled motivations

<table>
<thead>
<tr>
<th>supplier</th>
<th>Service &amp; Advice</th>
<th>consumer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life cycle costs</td>
<td>&quot;less is more&quot;</td>
<td>&quot;less is more&quot;</td>
</tr>
<tr>
<td>(material, work, waste management)</td>
<td></td>
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</tbody>
</table>

Willingness and culture of cooperation is required!
Chemical Leasing applications - some sectorswise examples

<table>
<thead>
<tr>
<th>Industry Sector</th>
<th>ChL application process</th>
<th>Unit of payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacture of electronic equipment</td>
<td>Powder coating</td>
<td>Per m² of coated surface</td>
</tr>
<tr>
<td>Car manufacture</td>
<td>Hydrocarbon solvents for cleaning</td>
<td>Per m² of surface area cleaned</td>
</tr>
<tr>
<td>Paint Manufacturing</td>
<td>Wall Painting</td>
<td>Per m² of painted surface area</td>
</tr>
<tr>
<td>Agriculture</td>
<td>Pest control</td>
<td>Per ha agriculture area of controlled pest/ or based on yield</td>
</tr>
<tr>
<td>Waste water and drinking water treatment</td>
<td>Treatment process</td>
<td>Per m³ of treated/purified water</td>
</tr>
<tr>
<td>Beverage and food-processing</td>
<td>Application of glue in labels</td>
<td>Based on area of the label pasted</td>
</tr>
</tbody>
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